INDEX.

Barbour, Frank A. Public ownership at Bridgewater, Mass., and the improvements made after purchase by the town. 1, Mar.

Bean, Elwood L., and **Bugbee, Julius W.** One year's operation of the Providence filtration plant. 399, Dec.

Besselievre, Edmund B. Mechanically cleaned sedimentation basins for water works. 52, Mar.

Boiler Feed-Water Purification.
BOOK REVIEW. 475, Dec.

Book Review. Boiler Feed-Water Purification. 475, Dec.

Boston's early water works, log pipe from. By CHARLES W. SHERMAN. 216, Sept.

Boston's high-pressure fire system. By E. E. WILLIAMSON. 194, Sept.

Bridgewater, Mass., public ownership and the improvements made after purchase by the town. By FRANK A. BARBOUR. 1, Mar.

Bugbee, Julius W., and **Bean, Elwood L.** One year's operation of the Providence filtration plant. 399, Dec.

Cambridge, Mass., five years of rapid sand filtration at. By M. C. WHIPPLE and H. C. CHANDLER. 218, Sept.

Campbell, Elmer W. Public water supplies of Maine. 99, June.

Capron, John D. Soil corrosion and its effects upon piping as shown by the tests of the United States Bureau of Standards. 81, June.

Cast-iron pipe and special castings, pipe flanges and fittings and manhole frames and covers, progress report on specifications for. 313, Sept.

Cement-lined pipe, effect upon the quality of water supplied. By BURTON G. PHILBRICK. 94, June.

Certain economic advantages arising from the private ownership of water companies. By ARTHUR S. DEWING. 63, Mar.

Chandler, H. C., and **Whipple, M. C.** Five years of rapid sand filtration at Cambridge, Mass. 218, Sept.

Charleston's two million gallon elevated tank. By J. E. GIBSON. 277, Sept.

Chicopee, Mass., sand-embankment impounding dam at. By M. G. MANSFIELD. 244, Sept.

Chlorine studies and some observations on taste-producing substances in water, and the factors involved in treatment by the super- and de-chlorination method. Discussion by NORMAN J. HOWARD. 59, Mar.

Clark, H. W. The effect of pipes of different metals upon the quality of water supplies. 31, Mar.

Committee on system of sanitary scoring of water supplies, final report of. 316, Sept.

Committee on thawing hydrants, report of. 79, Mar.

Connecticut, cross-connections in. By WARREN J. SCOTT. 365, Dec.

Control of water supplies of New York State and laws relating thereto. By C. A. HOLMQUIST. 261, Sept.

Copper, poisonous effects of. By F. B. MALLORY. 27, Mar.

Corrosion (soil) and its effects upon piping as shown by the tests of the United States Bureau of Standards. By JOHN D. CAPRON. 81, June.

Costs in Maryland, municipal water and sewerage. By ABEL WOLMAN. 439, Dec.
Cross-connections in Connecticut. By WARREN J. SCOTT. 365, Dec.

Danforth, George C. Military and emergency water supplies. 129, June.
Dennett, R. C., and Swan, G. L. Reliability features of an electrically-operated pumping station. 268, Sept.
Dewing, Arthur S. Certain economic advantages arising from private ownership of water companies. 63, Mar.
Distribution pumping stations of the Metropolitan Water Works. By A. O. DOANE. 183, Sept.
Distribution systems, the study and extension of. By LAURENCE C. HOUGH. 14, Mar.
Doane, A. O. Distribution pumping stations of the Metropolitan Water Works. 183, Sept.

Effect of pipes of different metals upon the quality of water supplies. By H. W. CLARK. 31, Mar.
Effect of cement-lined pipe upon the quality of water supplied. By BURTON G. PHILBRICK. 94, June.
Effects, poisonous, of copper. By F. B. MALLORY. 27, Mar.
Electrically-operated pumping station, reliability features of an. By R. C. DENNETT and G. L. SWAN. 268, Sept.
Elevated tank, Charleston's two million gallon. By J. E. GIBSON. 277, Sept.
Elimination of errors in the ortho-tolidin method. By F. R. MCCRUMB. 386, Dec.
Emergency water supplies, military and. By GEORGE C. DANFORTH. 129, June.
Errors in the ortho-tolidin method, elimination of. By F. R. MCCRUMB. 386, Dec.
Extension of distribution systems, study and. By LAURENCE C. HOUGH. 14, Mar.

Field engineering service of the National Fire Protection Association. By FRANKLIN H. WENTWORTH. 428, Dec.
Fighting fires beforehand. By C. W. MOWRY. 413, Dec.
Filtration at Cambridge, Mass., five years of rapid sand. By M. C. WHIPPLE and H. C. CHANDLER. 218, Sept.
Filtration plant, one year's operation of the Providence. By JULIUS W. BUBGEE and ELWOOD L. BEAN. 399, Dec.
Finneran, George H. Leaks and litigation. 201, Sept.
Fires beforehand, fighting. By C. W. MOWRY. 413, Dec.
Fire system, Boston's high-pressure. By E. E. WILLIAMSON. 194, Sept.
Five years of rapid sand filtration at Cambridge, Mass. By M. C. WHIPPLE and H. C. CHANDLER. 218, Sept.

Gibson, J. E. Charleston's two million gallon elevated tank. 277, Sept.

Herschel, Clemens. Public works and state boundaries. 331, Dec.
High-pressure fire system, Boston's. By E. E. WILLIAMSON. 194, Sept.
Holmquist, C. A. Control of water supplies of New York State and laws relating thereto. 261, Sept.
Hough, Laurence C. The study and extension of distribution systems. 14, Mar.
Howard, Norman J. Chlorine studies and some observations on taste-producing substances in water, and the factors involved in treatment by the super- and de-chlorination method. Discussion. 59, Mar.
Hydrants, report of committee on thawing. 79, Mar.

Impounding dam at Chicopee, Mass., sand-embankment. By M. G. MANSFIELD. 244, Sept.
Interstate water rights. By CALEB M. SAVILLE. 340, Dec.

Leaks and litigation. By GEORGE H. FINNERAN. 201, Sept.
Litigation, leaks and. By GEORGE H. FINNERAN. 201, Sept.
Log pipe from Boston's early water works. By CHARLES W. SHERMAN. 216, Sept.

Maine, public water supplies of. By ELMER W. CAMPBELL. 99, June.
Mallory, F. B. The poisonous effects of copper. 27, Mar.
Manhole frames and covers, progress report on specifications for cast-iron pipe and special castings, pipe flanges and fittings and. 313, Sept.
Mansfield, M. G. Sand-embankment impounding dam at Chicopee, Mass. 244, Sept.
Maryland, municipal water and sewerage costs in. By ABEL WOLMAN. 439, Dec.
Mazzur, Frank A. Obituary. 474, Dec.
McCrumb, F. R. Elimination of errors in the ortho-tolidin method. 386, Dec.
Mechanically cleaned sedimentation basins for water works. By EDMUND B. BESSELIEVRE. 52, Mar.
Metropolitan Water Works, distribution pumping stations of the. By A. O. DOANE. 183, Sept.
Military and emergency water supplies. By GEORGE C. DANFORTH. 129, June.
Mowry, C. W. Fighting fires beforehand. 413, Dec.
Municipal water and sewerage costs in Maryland. By ABEL WOLMAN. 439, Dec.

National Fire Protection Association, field engineering service of the. By FRANKLIN H. WENTWORTH. 428, Dec.
New England Water Works Association.
Address of retiring President Winsor. 298, Sept.
Dexter Brackett Memorial Medal, award of. 293, Sept.
Election of officers. 297, Sept.
Mayor Malcolm E. Nichols Trophy, award of. 296, Sept.
Proceedings:
January meeting. 76, Mar.
February meeting. 76, Mar.
March meeting. 78 Mar.
September meeting. 285, Sept.
November meeting. 473, Dec.
Remarks by:
Davis B. Kenniston. 285, Sept.
Louis K. Rourke. 287, Sept.
Hon. Edward W. Quinn. 288, Sept.
Reports:
Committee on specifications for cast-iron pipe and special castings, pipe flanges and fittings and manhole frames and covers. 313, Sept.
Committee on system of sanitary scoring of water supplies. 316, Sept.
Committee on thawing hydrants. 79, Mar.
Editor. 310, Sept.
Finance Committee. 309, Sept.
Secretary. 302, Sept.
Treasurer. 306, Sept.
New York State, control of water supplies and laws relating thereto. By C. A. HOLMQUIST. 261, Sept.

Obituary. FRANK A. MAZZUR. 474, Dec.
One year's operation of the Providence filtration plant. By JULIUS W. BUGBEE and ELWOOD L. BEAN. 399, Dec.

Operation of the Providence filtration plant, one year's. By JULIUS W. BUGBEE and ELWOOD L. BEAN. 399, Dec.
Ortho-tolidin method, elimination of errors in the. By F. R. MCCRUMB. 386, Dec.

Philbrick, Burton G. Effect of cement-lined pipe upon the quality of the water supplied. 94, June.
Pipes of different metals, effect upon the quality of water supplies. By H. W. CLARK. 31, Mar.
Pipe flanges and fittings and manhole frames and covers, progress report on specifications for cast-iron pipe and special castings. 313, Sept.
Plymouth, Penna., the typhoid fever epidemic of 1885. By CHARLES W. SHERMAN. 23, Mar.
Poisonous effects of copper. By F. B. MALLORY. 27, Mar.
Private ownership of water companies, certain economic advantages arising from the. By ARTHUR S. DEWING. 63, Mar.
Providence filtration plant, one year's operation of. By JULIUS W. BUGBEE and ELWOOD L. BEAN. 399, Dec.
Public ownership at Bridgewater, Mass., and the improvements made after purchase by the town. By FRANK A. BARBOUR. 1, Mar.
Public water supplies of Maine. By ELMER W. CAMPBELL. 99, June.
Public works and state boundaries. By CLEMENS HERSCHEL. 331, Dec.
Pumping station, reliability features of an electrically-operated. By R. C. DENNETT and G. L. SWAN.
Pumping stations of the Metropolitan Water Works, distribution. By A. O. DOANE. 183, Sept.

Quality of water supplied, effect of cement-lined pipe upon. By BURTON G. PHILBRICK. 94, June.
Quality of water supplies, effect of pipes of different metals upon. By H. W. CLARK. 31, Mar.

Rapid sand filtration at Cambridge, Mass., five years of. By M. C. WHIPPLE and H. C. CHANDLER. 218, Sept.
Reliability features of an electrically-operated pumping station. By R. C. DENNETT and G. L. SWAN. 268, Sept.
Report (final) of committee on system of sanitary scoring of water supplies. 316, Sept.
Report of committee on thawing hydrants. 79, Mar.
Report (progress) on specifications for cast-iron pipe and special castings, pipe flanges and fittings and manhole frames and covers. 313, Sept.

Sand-embankment impounding dam at Chicopee, Mass. By M. G. MANSFIELD. 244, Sept.
Sanitary scoring of water supplies, final report of committee on system of. 316, Sept.
Saville, Caleb Mills. Interstate water rights. 340, Dec.
Scott, Warren J. Cross-connections in Connecticut. 365, Dec.
Sedimentation basins for water works, mechanically cleaned. By EDMUND B. BESSELIEVRE. 52, Mar.
Sherman, Charles W. The typhoid fever epidemic of 1885 at Plymouth, Penna. 23, Mar.
Sherman, Charles W. Log pipe from Boston's early water works. 216, Sept.
Soil corrosion and its effects upon piping as shown by the tests of the United States Bureau of Standards. By JOHN D. CAPRON. 81, June.
Special castings, pipe flanges and fittings and manhole frames and covers, progress report on specification for cast-iron pipe and. 313, Sept.

Specifications for cast-iron pipe and special castings, pipe flanges and fittings and manhole frames and covers, progress report on. 313, Sept.
State boundaries, public works and. By CLEMENS HERSCHEL. 331, Dec.
Study and extension of distribution systems. By LAURENCE C. HOUGH. 14, Mar.
Super- and de-chorination method, chlorine studies and some observations on taste-producing substances in water, and the factors involved in treatment by the. Discussion by NORMAN J. HOWARD. 59, Mar.
Swan, G. L., and **Dennett, R. C.** Reliability features of an electrically-operated pumping station. 268, Sept.
System of sanitary scoring of water supplies, final report of committee on. 316, Sept.

Taste-producing substances in water, and the factors involved in treatment by the super- and de-chlorination method, chlorination and some observations on. Discussion by NORMAN J. HOWARD. 59, Mar.
Tests of the United States Bureau of Standards, soil corrosion and its effects upon piping as shown by the. By JOHN D. CAPRON. 81, June.
Thawing hydrants, report of committee on. 79, Mar.
Typhoid fever epidemic of 1885 at Plymouth, Penna. By CHARLES W. SHERMAN. 23, Mar.

United States Bureau of Standards, soil corrosion and its effects upon piping as shown by the tests of the. By JOHN D. CAPRON. 81, June.

Water companies, certain economic advantages arising from the private ownership of. By ARTHUR S. DEWING. 63, Mar.
Water rights, interstate. By CALEB M. SAVILLE. 340, Dec.
Water supplies, final report of committee on system of sanitary scoring of. 316, Sept.
Water supplies, military and emergency. By GEORGE C. DANFORTH. 129, June.
Water supplies of New York State and laws relating thereto, control of. By C. A. HOLMQUIST. 261, Sept.
Wentworth, Franklin H. Field engineering service of the National Fire Protection Association. 428, Dec.
Whipple, M. C., and **Chandler, H. C.** Five years of rapid sand filtration at Cambridge, Mass. 218, Sept.
Williamson, E. E. Boston's high-pressure fire system. 194, Sept.
Winsor, Frank E. Portrait of. Frontispiece.
Wolman, Abel. Municipal water and sewerage costs in Maryland. 439, Dec.